

Amendments to the Claims

Please amend claims as follows. This listing of claims replaces all other listings of the claims.

Please amend claims 1, 5-6, 8, 12-14, 20, and 46-47, cancel claims 2-3 and 9-11, and add new claims 48-49 as follows:

1. (currently amended) A microfluidic device for analyzing a plurality of sample fluids, the device comprising:

a plurality of interaction cells;

a fluid control means including i) means for providing to the interaction cells a preparation fluid, and ii) means for providing to the interaction cells a sample fluid, wherein each interaction cell receives a different sample fluid, wherein the interaction cells and the fluid control means are within a housing; and

a plurality of microcantilevers disposed in each of the interaction cells, wherein each of the plurality of microcantilevers within the interaction cell is configured to deflect in response to an interaction involving a component of the sample fluid provided to the interaction cell, thereby analyzing the plurality of sample fluids in the plurality of interaction cells.

2-3. (canceled)

4. (original) A microfluidics device according to claim 1, wherein the fluid control means includes means for removing a fluid from the interaction cells.

5. (currently amended) A microfluidics device according to claim 1, wherein the fluid control means comprises a microprocessor with an integrated circuit containing control circuitry to control activation of the valves ~~is robotic~~.

6. (currently amended) A microfluidics device according to claim 1, wherein the fluid control means comprises valves that lead to a common line or manifold comprising fluid paths ~~is manual~~.

7. (original) A microfluidics device according to claim 1, wherein the plurality of microcantilevers is provided in a planar array of fingers.

8. (currently amended) A microcantilever platform cartridge comprising:

a plurality of interaction cells, each of the interaction cells including an inlet for receiving a sample fluid, wherein each of the interaction cells receives a different sample fluid, and the interaction cells and inlets are disposed within a housing of the cartridge; and

~~at least one~~ a plurality of microcantilevers disposed in each of the interaction cells, the microcantilevers capable of deflecting in response to chemical interaction with a component of the sample fluid.

9-11. (canceled)

12. (currently amended) An apparatus for performing microfluidics analysis, the apparatus comprising:

a housing, the housing comprising a plurality of fluid lines, each of the fluid lines including an inlet for receiving a fluid from a fluid pump, and a plurality of control lines in communication with the fluid lines, each of the control lines including an inlet for receiving a control fluid;

a microcantilever platform, the microcantilever platform comprising: a plurality of interaction cells, each of the interaction cells including an inlet for receiving one or more preparation fluids and a sample fluid, wherein each of the interaction cells receives a different sample fluid, and an outlet whereby fluid may flow out of the interaction cell, wherein the interaction cells, inlets and outlets are within the housing, and wherein each interaction cell is configured to receive a plurality of microcantilevers, the microcantilevers in the cell being identically configured to deflect in response to an interaction involving a component of a sample fluid; and

a plurality of valves in communication with the fluid lines for selectively controlling the flow of fluid into and out of the interaction cells.

13. (currently amended) An apparatus according to claim 12, and wherein each of the interaction cells further includes at least one a plurality of microcantilevers, each microcantilever within the plurality configured to deflect in response to chemical interactions with a component of the sample fluid.

14. (currently amended) An apparatus according to claim 12, wherein the control fluid lines are adapted to accept a control fluid which is a gas.

15. (original) An apparatus according to claim 12, wherein the number of the plurality of valves is less than the number of the plurality of fluid lines.
16. (original) An apparatus according to claim 12, wherein the number of the plurality of valves is less than the number of the plurality of control lines.
17. (original) An apparatus according to claim 12, further comprising a plurality of expansion chambers for eliminating gas from fluid entering the interaction cells.
18. (original) An apparatus according to claim 12, further comprising a waste receptacle for receiving fluid from the outlets of the interaction cells.
19. (original) An apparatus according to claim 12, further comprising a reservoir for sample collection from each outlet of each interaction cell.
20. (currently amended) An apparatus according to claim 19, wherein at least one of the reservoirs is adapted whereby a sample fluid collected in the adapted reservoir is subject to further analysis.
21. (original) An apparatus according to claim 20, wherein the further analysis includes gel electrophoresis.
22. (original) An apparatus according to claim 21, wherein the gel electrophoresis is multi dimensional.
23. (original) An apparatus according to claim 22, wherein at least one of the dimensions is polyacrylamide gel electrophoresis in the presence of a denaturing detergent.
24. (original) An apparatus according to claim 20, wherein the further analysis includes mass spectroscopy.
25. (original) An apparatus according to claim 12, wherein each of the interaction cells includes a plurality of microcantilevers,
26. (original) An apparatus according to claim 25, wherein the plurality of microcantilevers is provided in a planar array having a plurality of fingers.
27. (original) An apparatus according to claim 12, wherein the apparatus is mounted on a temperature-controlled platform.
- 28-45. (canceled)
46. (currently amended) A microfluidics device cartridge comprising:

a plurality of interaction cells, each of the interaction cells being configured to receive a plurality of at least one microcantilevers, wherein each of the microcantilevers in the plurality in each cell is identically configured to deflect in response to a chemical interaction; and

a fluid control means including i) means for providing to the interaction cells a preparation fluid, and ii) means for providing to the interaction cells a sample fluid, wherein each interaction cell receives a different sample fluid.

47. (currently amended) A microfluidics device comprising:

a housing, the housing comprising a plurality of fluid lines, each of the fluid lines including an inlet for receiving a fluid from a fluid pump disposed within the housing, and a plurality of control lines in communication with the fluid lines, each of the control lines including an inlet for receiving a control fluid;

a microcantilever platform within the housing, the microcantilever platform comprising a plurality of interaction cells, each of the interaction cells configured to receive a plurality of microcantilevers, and each of the interaction cells includes including an inlet for receiving one or more preparation fluids and a sample fluid, wherein each of the interaction cells receives a different sample fluid, and an outlet whereby fluid may flow out of the interaction cell; and

a plurality of valves in communication with the fluid lines for selectively controlling the flow of fluid into and out of the interaction cells.

48. (new) A microfluidics device according to claim 1, wherein the interaction cell further includes at least one outlet whereby fluid flows out of the cell.

49. (new) An apparatus according to claim 12, wherein each of the interaction cells does not include microcantilevers.